

Remarks

1. AMENDMENT OF THE CLAIMS

Applicant's representatives have restructured the claims of the application in view of the Office Action mailed 01/25/2005. This restructuring is set forth above and amends some of the claims from the previous amendment as well as introduces new claims, the breadth of which are within the scope of the claims being cancelled but which are directed specifically to either over-the-ear embodiments or in-the-ear embodiments.

Claim 16 is amended to include the limitations that the noise barrier device, which now includes an ear cup as an element of the claim, has a cushion formed from a material which provides a damping ratio of at least 0.75. Since claim 16 is amended to limit it to over-the-ear embodiments and claim 17, which is directed to in-the-ear embodiments and was previously dependent on claim 16, has now been amended to make it an independent claim, there is no longer a need to introduce the structure of the claimed invention with language sufficient to describe both over-the-ear and in-the-ear embodiments. This introductory language which describes some elements has been removed from the claim 16 by this amendment, thereby making it more easily read. The scope of claim 16 has also been amended to more particularly describe the character of the material of the cushion which forms part of the over-the-ear ear cup. Claim 16 now has essentially the scope of claim 15, which also has an ear cup.

As mentioned above Claim 17 has been amended to make it an independent claim which includes the limitations of previous claim 16, upon which it was dependent, and to correct the indefiniteness pointed out by the Examiner. Since the claim is directed to the in-the-ear embodiments and is now in independent form, the generic language drafted to cover both broad classes of embodiments is removed, since the generic structures are set forth in more specific

terms in the claim, and there is no need to preserve antecedent basis with respect to claim 16. In view of the Examiner's remarks, the restructuring of the claim should eliminate the rejection based on 35 U.S.C. §112, and thus claim 17 should be in condition for allowance.

New claims 19 and 21, which are respectively dependant on claims 16 and 17, treat with greater particularity the character of the structure of the cushion by specifying that it be a two-component cushion formed of a material that is at least partially plastically deformable contained in a flexible sheath. Support for this additional limitation is found in the specification in the second full paragraph on page 13, the second full paragraph on page 14, and in the last paragraph on page 18, continuing onto page 19. This additional limitation is also set forth in claims 24, 26, 28, 33, and 34.

New claims 20 and 22 have been added which are respectively dependant on claims 16 and 17. Claim 20 has been added to claim the further preferred damping ratio of the material of the peripherally extending cushion. This limitation was previously set forth in claims 2 and 13. Similarly, claim 22 has been added to claim the preferred damping ratio of the concha cushion; this limitation was originally set forth in claims 1 and 12.

New claims 23 - 36 have been added to form two new series of claims. Claims 23 - 30 are directed only to the in-the-ear embodiments of the invention, while claims 31 - 36 are directed only to the over-the-ear embodiments.

Claims 23 - 30 form an independent series of claims directed to the embodiment of the present invention employing in-the-ear type noise barriers. Claim 23 is an independent claim having essentially the same scope as claim 8, which the Examiner stated should be allowable if rewritten as an independent claim including the limitations of its base claim. Claims 24 - 28 add preferred limitations of the damping ratio of the material of the concha cushion (the broader limit

of the damping ratio was set forth originally in claims 1 and 12, and the more preferred limit was set forth in claims 2 and 13), and/or the construction of the concha cushion having an at least partially plastic material encased in a flexible sheath (support for this additional limitation is found in the specification in the second full paragraph on page 13, the second full paragraph on page 14, and in the last paragraph on page 18, continuing onto page 19). Claim 29 has essentially the same scope as claim 9, which the Examiner felt to be substantively allowable, and claim 30 is directed to the same limitation. This limitation was also set forth in claim 4.

Claims 31 - 36 form an independent series of claims directed to the embodiment of the present invention having ear cups with a peripherally extending cushion of a material, and include the limitation that the cushion material provides a damping ratio of at least 0.75. Thus, claim 31 has essentially the same scope as claim 5. Claims 32 - 34 again add further preferred limitations of the damping ratio of the material of the cushion, and/or the construction of the cushion having an at least partially plastic material encased in a flexible sheath. Claim 35, which adds the limitation that a head band serves to connect the ear cups, has essentially the same scope as claim 6. Claim 36 also sets forth this limitation, which is also found in claim 11.

Claims 1-15 and 18 are cancelled by the amendment.

2. RESPONSE TO EXAMINER'S REMARKS

In the office action, the Examiner objected to claims 3, 4, 8, 9, and 14 for being dependent on rejected base claims, and stated that these claims would be allowable if rewritten as independent claims including the limitations of the base claim and any intervening claims. New claim 23 is an independent claim having essentially the same scope and limitations of claim 8, and thus should be allowable, as should claims 24 - 30 which are dependent thereon. Claims 24,

26, and 28 further distinguish the claimed invention in requiring the concha cushions to be fabricated from an at least partially plastically deformable material encased in a flexible sheath. Claims 25 - 28 and 30 provide further distinction in setting forth values for the damping ratio of the material of the concha cushion. Claim 29 has essentially the same scope and limitations as claim 9, and thus is in a condition for allowance. Thus, claims 23 - 30 should be in condition for allowance and such is respectfully requested.

As discussed above, claim 17 was rejected under 35 U.S.C. §112, second paragraph, for being indefinite; the claim was not rejected based on prior art. The above amendment places claim 17 in independent form and includes the limitations of claim 16, while simplifying the language and correcting the deficiency pointed out by the Examiner. Thus, claim 17 as amended should overcome the Examiner's basis for rejection and should be in a condition for allowance. Claims 21 and 22, which add additional limitations, should also be allowable. Allowance of claims 17, 21, and 22 are respectfully requested.

Claim 16 was rejected under 35 U.S.C. §102(b) as anticipated by Scott, by Huntress, and by Fitzgerald; however, claim 16 as currently amended has an ear cup and thus now has essentially the scope and limitations of claim 15, since it is directed only to the over-the-ear embodiments and requires the cushion material to provide a damping ratio of at least 0.75. Since the scope of claim 16 as amended is essentially the same scope as that of claim 15, which was rejected solely based on Fitzgerald, the rejection based on Fitzgerald is considered first. Claim 15 was rejected under 35 U.S.C. §103(a) as being obvious. A rejection based on Fitzgerald is not only felt to be inappropriate for claim 15, but also for claim 16, for the reasons set forth below.

Fitzgerald teaches the use of ear phones which engage the user's ear and are made of a "resilient rubber or plastic material". Claims 15 and 16, as amended, do not claim an earphone but rather claim ear cups that surround the ear, rather than engaging the ear itself. Thus, the

reliance of the Examiner on the following statement:

“The earphones are preferably formed of a *resilient rubber or plastic* material to *securely contact the user's ear* and minimize the reception of external background noise.” (Column 3 lines 13-16 emphasis added.)

is, at best, misplaced, since the claimed ear cup does not bear against the ear, but rather bears against the side of the head surrounding the ear.

Furthermore, in the same paragraph of Fitzgerald, an alternative recommendation for reducing background noise is made. This recommendation is offered in the event that greater reduction in background noise is sought. The paragraph continues:

“Alternatively, the earphones may be cupped cushions or foam cushions *similar to high fidelity earphones* (not shown) in order to reduce background noise *still further*.”(column 3 lines 16-19 emphasis added)

With this latter statement, Fitzgerald is clearly acknowledging that the use of standard cup-shaped over-the-ear devices provides reduction of background noise than cannot be obtained by the use of the suggested on-the-ear devices, even if a “resilient rubber or plastic material” is employed. Furthermore, there is no teaching of how such cup-shaped cushions could be improved by employing different material for the pads. In fact, the only art of record that further describes materials or the characteristics of the material to be used for ear cups is Curry, where the material for the pads of the cup-like structure is described as being resilient.

For the reasons set forth above, it is the position of applicant's representatives that Fitzgerald does not teach the use of a plastic material to provide secure contact between the

user's head and an ear cup, but rather, at best, suggests the use of foam cushions for such purpose. Thus, Fitzgerald is felt to teach away from the use of a material having the claimed damping ratio and instead teaches the use of materials such as those discussed in the background section of the present application.

With regard to the Examiner's position that Fitzgerald "suggests the general plastic material without specify[ing] the particular [plastic] to be used", Applicant's representatives respectfully disagree that Fitzgerald teaches a general plastic material for any part of a noise barrier, let alone for an over-the-ear cup, for the following reasons.

To the extent that the teaching of Fitzgerald is relevant, it is felt that Fitzgerald is limited to teaching resilient materials, which may be plastic, for the purpose of use in ear-contacting earphones. The limitation of any plastic material to be employed being resilient is implicit, since the statement of Fitzgerald in question reads "resilient rubber or plastic" (column 3 line 14). Thus, "resilient" as used in Fitzgerald should apply to both rubber and plastic materials to avoid redundancy; "resilient rubber" would be redundant, since a rubber is an elastic material by definition. Thus, the term "resilient" would be completely redundant if it were not intended to apply to plastic as well as rubber materials. Furthermore, since a plastic is typically defined as "any of various nonmetallic compounds . . . which can be molded into various forms and hardened or formed into pliable sheets or films, fibers, flexible or hard foams, etc. for commercial use" (see enclosed definition), "resilient" would be a more appropriate qualifier for plastic than for rubber. Having the material resilient would assure that the material securely contacts the user's ear, thereby minimizing the reception of external background noise through a gap therebetween.

Since Fitzgerald suggests that the rubber or plastic material is "resilient", which is a synonym for "elastic", and even this suggestion is not for peripherally extending cushions for

placement against the user's head around the ear, one skilled in the art would not test "any plastic materials, including those with a damping ratio greater than 0.75", in order to find the best-suited material for minimizing noise in such an ear cup. Furthermore, even if various plastic materials were to be tested, Fitzgerald teaches that an elastic material, as taught in the prior art, is the appropriate material. This would teach away from testing materials having a high damping ratio.

In summary, the only teaching that materials having the claimed damping ratio would be effective, let alone be effective when employed in an ear cup, is found in the present application, and this is clearly not prior art. Furthermore, for the Patent Office to fulfil its burden to establish a *prima facie* case of obviousness under 35 U.S.C. § 103(a), there is a need for a teaching to modify the reference.

In re Fritch, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783-4 (Fed. Cir. 1992) states that:

"The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the claimed invention obvious unless the prior art suggested the desirability of the modification."

In fact, the teaching of Fitzgerald teaches foam cushions and teaches away from the use of the material of the present invention, as does the prior art of Curry which suggests foam rubber, flexible plastic, inflated structures or other soft and pliable materials for resilient pad members (see column 3 lines 27-30).

Similarly, the court in *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 220 USPQ 303, 312-313 (Fed. Cir. 1983) stated:

“To imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher.”

It should be apparent from reviewing the above that, if one does not have the present application before them, one would not find any suggestion that one should look for a plastic or any other material with the claimed damping capacity to be used for a cushion. Thus, the suggestion by the Examiner is clearly hindsight and is inappropriate.

The requirement that such teaching or motivation be found in the prior art is especially important in less technologically complex inventions, as is the present situation. *See In re Dembiczak* 50 USPQ2d 1614, 1617 (CA FC 1999).

For the reasons set forth above, it is felt that claim 16 is clearly patentable over the teaching of Fitzgerald.

With regard to the rejection of claim 16 based on Scott and Huntress, these references are directed to in-the-ear type devices, and thus it is felt that these references should not be applied to claim 16 as currently amended to limit the claim to over-the-ear embodiments. The scope of claim 16 as presently amended is essentially the same as that of claim 15, and the Examiner did not cite Scott or Huntress against claim 15. Furthermore, as set forth in detail in the amendment filed 09/15/2004, neither Scott nor Huntress teaches a material which is at least partially plastically deformable as defined in the present application (let alone a material with a damping ratio of greater than 0.75), but rather both teach elastic materials.

The Examiner, in his response to the arguments presented in the earlier amendment, states that Scott discloses that other plastics could be used. This does not make obvious any particular sort of plastic, since Scott only discusses low density and softness as characteristics to be considered, not plastic deformation. In fact, Scott specifies the plastic as being elastic and teaches the desirability of a memory for the plastic (see column 1, lines 64 - 68), thus teaching away from use of a plastically deformable or partially plastically deformable material. With regard to Huntress, the Examiner stated that silicon rubber as taught by Huntress rarely returns fully and perfectly to its original shape, but provided no support for this statement. Even if true, the fact that a silicon rubber may not return "fully and perfectly" to its original shape when a force is removed does not make it at least partially plastically deformable, since it will quickly return essentially to its original shape. As defined in the present application, a material which is plastically deformable does not return to its original shape, and one which is partially plastically deformable does not return immediately to its original shape, but rather returns slowly to its original shape, either fully or partially (see first full paragraph on page 6 and first full paragraph on page 14). Furthermore, as currently set forth in claim 16, the material has a damping capacity of at least 0.75. Silicon rubber, an elastomer, would not meet these definitions for being either plastically deformable or partially plastically deformable and, furthermore, would not have a damping capacity of at least 0.75.

With regard to the structure of Scott, the Examiner noted that the vent passage of Scott is not intended to pass external noise, but rather is intended to equalize air pressures on either side of the device. While the passage is apparently not *intended* to pass noise, it appears that it will inherently do so, since the passage *is* intended to equalize air pressure, and sound waves are pressure waves; it appears inherent that the vent passage will allow a substantial amount of outside noise through. Applicant's representatives respectfully point out, as was pointed out in the earlier amendment, that Scott teaches only a support function of the device, not a function of providing a sound barrier. With regard to the structural distinctions of the invention as set forth

in Claim 16 over the structures taught by Scott and Huntress, the Examiner's remarks do not address these distinctions which were set forth in the earlier amendment, and it is still felt that these differences in structure provide additional distinction to the present claims.

Thus, it is felt that Fitzgerald teaches away from the present invention as set forth in claim 16 as currently amended, that Scott and Huntress are not properly applied against the claim as amended, and would in any case not make the claim obvious in view of the distinctions in materials and the structural differences. It is felt that claim 16 is clearly allowable over the prior art of record.

Claim 19 further distinguishes the claimed invention in requiring the cushion to be fabricated from an at least partially plastically deformable material encased in a flexible sheath. Claim 20 provides further distinction in setting forth a value for the damping ratio of the material of the cushion, which would not be met by the materials taught by Fitzgerald, Scott, and Huntress. As pointed out above, Fitzgerald teaches away from such damping materials.

Claims 31 - 36 essentially include all the limitations of claim 5, which was also rejected as obvious based on Fitzgerald. Since these claims are also limited to over-the-ear devices and require the material of the cushion to provide a damping ratio of at least 0.75, it is felt that the above arguments made with regard to claim 16 apply equally to these claims. Again, Fitzgerald teaches away from the use of materials having the claimed damping ratio. Thus, it is felt that claims 31 - 36 are also clearly allowable over the prior art of record.

3. CONCLUSION

For the reasons discussed above, it is felt that the present amendment places all remaining

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claims in a condition for allowance, and such allowance is respectfully requested.

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